



**THE DATASHEET OF  
HRG3216P-68R0-D-T5**





# High power thin film chip resistors (short side terminal)

■ HRG series

AEC-Q200 Compliant

## Features

- Wider bottom terminal enabling higher power capability (short side terminal)
- Significantly larger power handling capability than existing same size resistors  
Size: 3216, Power rating: 1.0W, Resistance range: 10 ~ 100KΩ
- Precision resistance tolerance:  $\pm 0.1\%$ , very small TCR:  $\pm 25\text{ppm}/^\circ\text{C}$
- Thin film structure enabling low noise and anti-sulfur

## Applications

- Power source related devices
- DC motors, inverters
- Robotics, Industrial control system



## ◆ Part numbering system

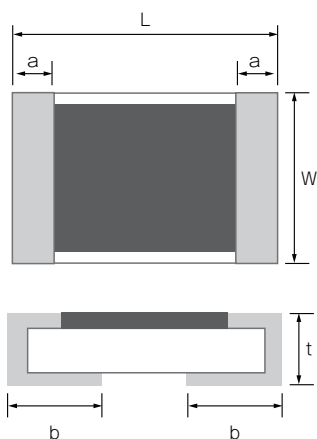
**HRG 3216 P - 1001 - B - T5**

|                                       |  |  |   |
|---------------------------------------|--|--|---|
| Series code                           |  |  | Packaging quantity:<br>T1(1,000pcs), T5(5,000pcs) |
| Size: HRG3216                         |  |  | Resistance tolerance                              |
| Temperature coefficient of resistance |  | Nominal resistance value (E-24, E-96: all 4 digit) |   |

## ◆ Electrical Specification

| Type    | Power ratings | Temperature coefficient of resistance<br>(ppm/°C) | Resistance range(Ω)<br>Resistance tolerance |                              | Maximum voltage | Resistance value series | Operating temperature                      | Packaging quantity |
|---------|---------------|---|---|------------------------------|-----------------|-------------------------|--|--------------------|
|         |               |   | $\pm 0.1\%$ (B)                             | $\pm 0.5\%$ (D)              |                 |                         |  |                    |
| HRG3216 | 1.0W          | $\pm 25$ (P)                                      | $47 \leq R \leq 100\text{k}$                |                              | 200V            | E-24, E-96              | $-55^\circ\text{C} \sim 155^\circ\text{C}$ | T1<br>T5           |
|         |               | $\pm 50$ (Q)                                      | $47 \leq R \leq 100\text{k}$                | $10 \leq R \leq 100\text{k}$ |                 |                         |  |                    |

## ◆ Dimensions



| Type    | Size (inch) | L               | W               | a               | b               | t               |
|---------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| HRG3216 | 1206        | $3.20 \pm 0.20$ | $1.60 \pm 0.20$ | $0.50 \pm 0.25$ | $1.10 \pm 0.20$ | $0.45 \pm 0.10$ |

(unit : mm)

## ◆ Reliability specification

| Test items                     | Condition (test methods (JIS C5201-1))                          | Standard       |                |
|--------------------------------|---|----------------|----------------|
|                                |   | ≤47Ω           | ≥47Ω           |
| Life (biased)                  | 70°C, rated voltage,*1 90min on 30min off, 1000hours            | ±(0.5%+0.05Ω)  | ±(0.25%+0.01Ω) |
| High temperature high humidity | 85°C, 85%RH, 1/10 of rated power, 90min on 30min off, 1000hours | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω)  |
| Temperature shock              | -55°C (30min) ~ 125°C (30min) 1000cycles                        | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω)  |
| High temperature exposure      | 155°C, no bias, 1000hours                                       | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω)  |
| Resistance to soldering heat   | 260±5°C, 10 seconds (reflow)                                    | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω)  |

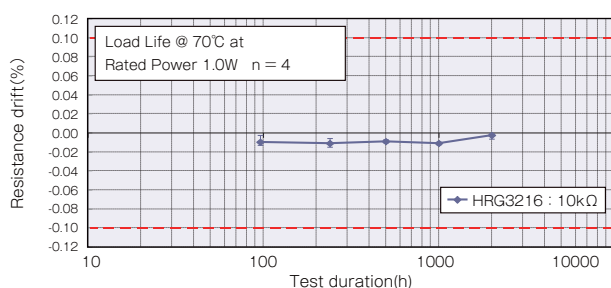
\*1 Rated voltage is given by  $E = \sqrt{R \times P}$

E= rated voltage (V), R=nominal resistance value(Ω), P=rated power(W)

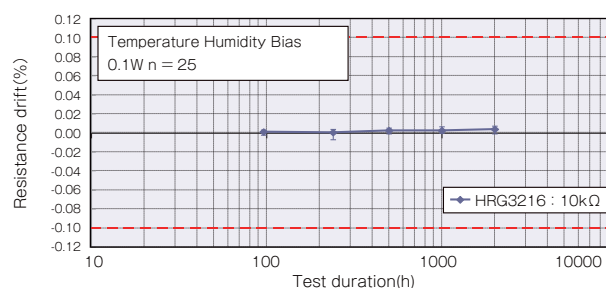
If rated voltage exceeds maximum voltage /element, maximum voltage/element is the rated voltage.

## ◆ Reliability test data

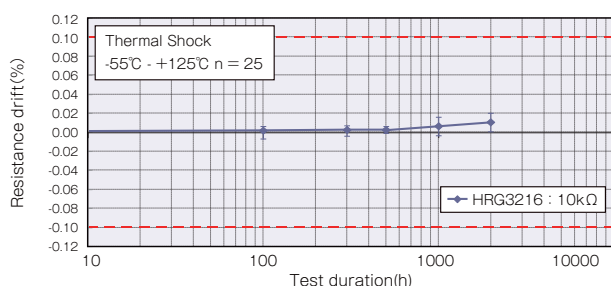
### ○ Biased life test



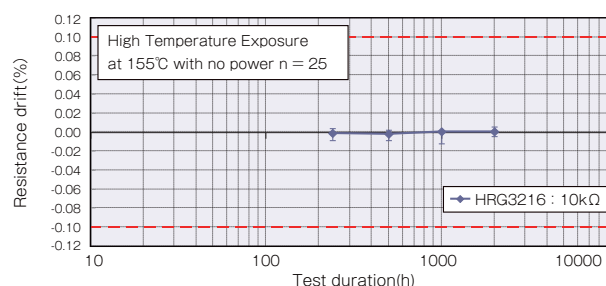
### ○ High temperature high humidity (biased)



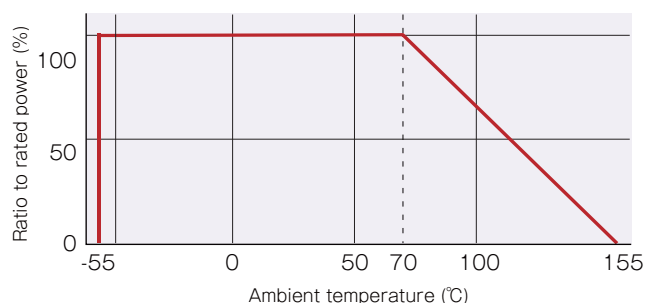
### ○ Temperature shock



### ○ High temperature exposure





## ◆ Derating Curve



## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View HRG3216P-68R0-D-T5 on WIN SOURCE](#)
-  [Susumu Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management